

# METAL SEPARATOR

## QUICKTRON 05 A

### DETECTION OF ALL TYPES OF METALS

- FERROUS
- STAINLESS STEEL
- ALUMINUM
- COPPER
- BRASS
- .....

RELIABLE DETECTION OF FREE OR ENCAPSULATED CONTAMINANTS.

Version 09/17

**HIGH SENSITIVITY METAL SEPARATOR FOR THE INSPECTION OF FREE FLOWING - GRAVITY FED BULK MATERIALS SUCH AS GRAIN, FEED, GRANULATES, POWDERS, ...**



### INDUSTRIES

- PLASTIC INDUSTRY
- TIMBER INDUSTRY
- RECYCLING INDUSTRY

### APPLICATION

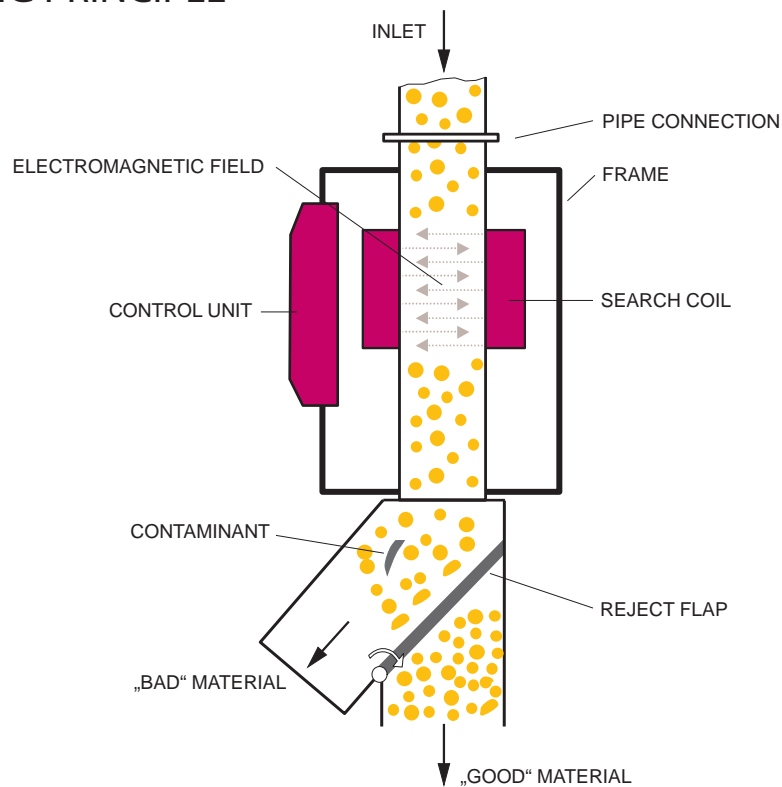
- PRODUCT INSPECTION
- MACHINERY PROTECTION E. G.: MILLS, MIXER/KNEADER, EXTRUDER AND MORE



GLOBAL. MAGNETIC. FORCE.™

- THE **Bunting** QUICKTRON IS EASILY INTEGRATED INTO EXISTING INSTALLATIONS THANKS TO LOW OVERALL HEIGHT AND COMPACT DIMENSIONS.
- THE OPEN FRAME CONSTRUCTION ALLOWS UNRESTRICTED ACCESSIBILITY TO ALL COMPONENTS FOR EASY CLEANING.
- A VARIETY OF MODELS TO SUIT ALL APPLICATIONS AND THROUGHPUTS. ROUND APERTURES FROM 50 TO 300 MM, AS WELL AS SQUARE OR RECTANGULAR OPENINGS ARE AVAILABLE.
- THE ELECTRONICS ARE MOUNTED TO THE FRAME, REMOTE MOUNTING OF THE ELECTRONICS IS AVAILABLE, IF DESIRED.
- THE DATA SHEET CONTAINS ADDITIONAL INFORMATION AS TO THE AMD 05 (VERSION 5.2) ELECTRONICS.

## WORKING PRINCIPLE



THE QUICKTRON SERIES ELECTRONIC METAL SEPARATORS AUTOMATICALLY DETECT AND REJECT METALLIC CONTAMINANTS FROM FREE FALLING BULK MATERIALS. CLEAN PRODUCT PASSES FREELY THROUGH THE REJECT ASSEMBLY. A CONTAMINANT IN THE PRODUCT STREAM ALTERS THE HIGH FREQUENCY FIELD GENERATED BY THE SEARCH COIL. THE ELECTRONICS EVALUATE THIS SIGNAL AND GENERATE AN IMPULSE FOR THE SOLENOID VALVE AND THE DOUBLE ACTUATING AIR CYLINDER OF THE REJECT ASSEMBLY. THE CONTAMINANT IS INSTANTLY DIVERTED FROM THE GOOD PRODUCT STREAM ASSURING MINIMAL GOOD PRODUCT LOSS. THE REJECT TIME IS ADJUSTABLE. IN THE CASE OF SEVERAL METAL PARTICLES BEING PRESENT, THE REJECT TIME WILL BE EXTENDED ACCORDINGLY, TO ASSURE A METAL FREE PRODUCT. THE EJECT FLAP RETURNS AUTOMATICALLY TO IT'S NORMAL POSITION AFTER A SUCCESSFUL METAL REJECTION EVENT.

## STANDARD SCOPE OF DELIVERY

- REJECT UNIT INCLUSIVE ALL PNEUMATIC COMPONENTS SUCH AS AIR PRESSURE REGULATOR, WATER SEPARATOR, ETC.
- ELECTRONICS MOUNTED IN A METAL CABINET
- CONNECTING CABLES
- INSTALLATION HARDWARE
- USER MANUAL INCL. INSTALLATION INSTRUCTIONS, WIRING DIAGRAM AND SPARE PARTS LIST IN SEVERAL LANGUAGES
- EC CONFORMITY DECLARATION



## OPTIONS

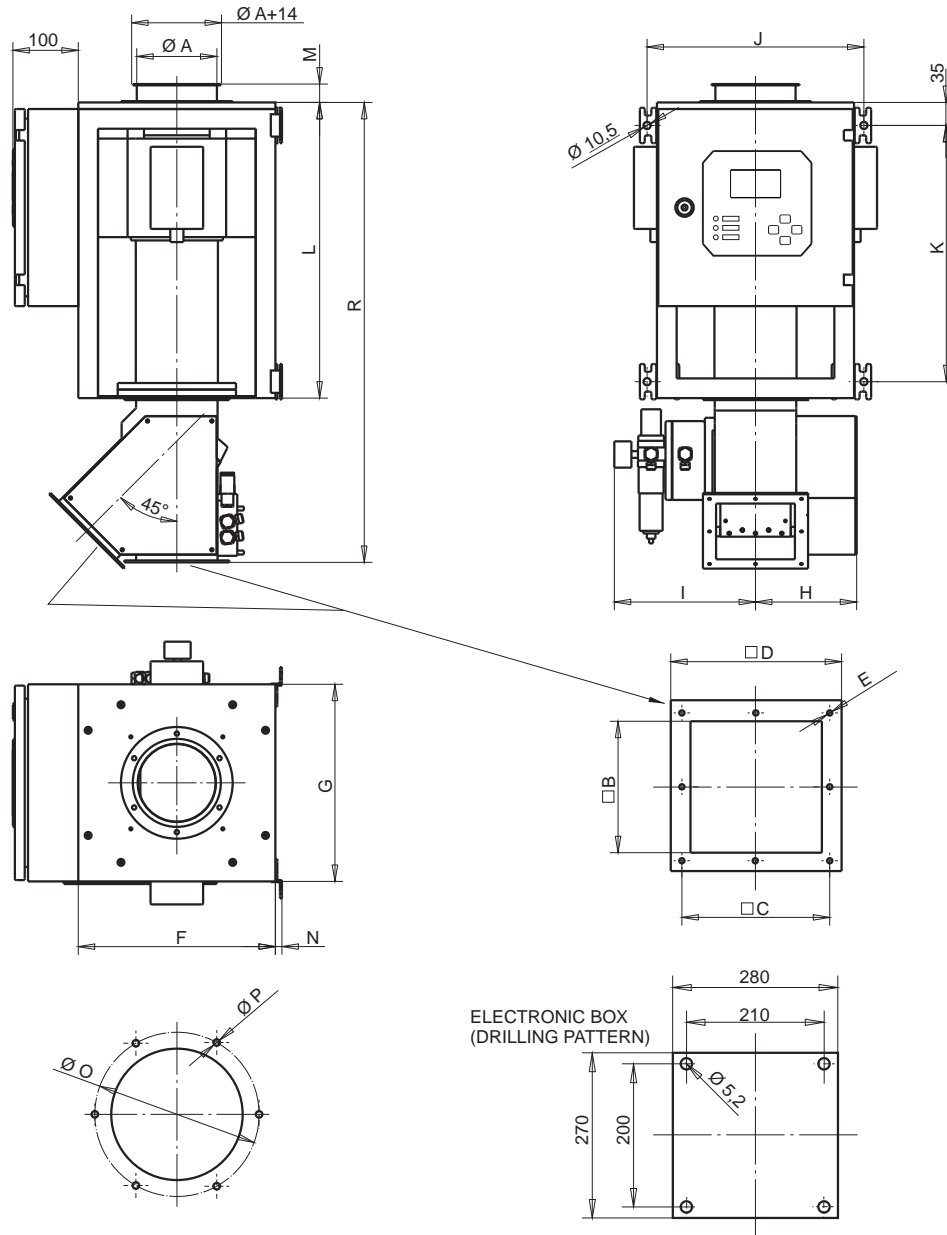
- OPTICAL AND ACOUSTICAL SIGNAL UNITS
  - BEACON
  - BUZZER
  - BEACON WITH SIREN
- EXTENDED SELF MONITORING
  - AIR PRESSURE
  - DIVERTER FUNCTION
- (SPECIAL PORT)-TRANSITIONS
  - FOR MATERIAL INFEEED
  - FOR „GOOD“ MATERIAL OUTLET
  - FOR REJECTED MATERIAL (SIZE AND SHAPE MAY BE FREELY DEFINED AS REQUIRED)
- CONNECTING FLANGES
- AIR COMPRESSOR
- COMPRESSED AIR TANK
- ADDITIONAL FILTERS
  - MAGNETICALLY OPERATED VOLTAGE STABILIZERS
  - ELECTRONICALLY OPERATED VOLTAGE STABILIZERS

## SPECIAL VERSIONS

- STAINLESS STEEL (1.4301 / SS 304)
- FOR OVERPRESSURE APPLICATIONS UP TO 0,3 BAR
- HIGH TEMPERATURE VERSIONS
- REJECT MECHANICS FOR SLOW FLOWING, STRINGY, EXTREMELY LIGHT AND VERY COARSE PRODUCTS
- „QUICK OUT“ REJECT. THE REJECT MECHANICS CAN BE MANUALLY DISCONNECTED IN SECONDS FOR EASY CLEANING
- HIGHER ELECTRONIC PROTECTION RATING (NEMA RATING) SUCH AS EXPLOSION PROOF VERSIONS
- UNITS PAINTED TO CUSTOMER SPECIFIC COLOR CODE
- CUSTOMER SPECIFIC SUPPLY VOLTAGE
- „NEUTRAL VERSION“ FOR OEM CUSTOMERS



DIMENSIONS



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	WEIGHT
50	70	86	100	8xM5	220	300	100	180	250	260	310	-	-	72	4xM5	490	25 kg
70	70	86	100	8xM5	220	300	100	180	250	260	310	-	-	130	4xM5	490	25 kg
80	120	140	160	8xM5	300	300	154	215	330	340	400	35	10	$\varnothing 108$	6xM5	650	35 kg
100	120	140	160	8xM5	300	300	154	215	330	340	400	28	10	$\varnothing 130$	6xM5	650	40 kg
120	120	140	160	8xM5	300	300	154	215	330	390	450	28	10	$\varnothing 150$	6xM5	700	45 kg
150	200	225	246	8xM5	370	370	203	255	380	405	470	36	5	$\varnothing 180$	6xM5	800	55 kg
200	200	225	246	8xM5	430	430	203	255	460	605	670	37	5	$\varnothing 230$	6xM5	1000	65 kg
250	300	325	360	8xM5	530	530	322	180	560	605	665	48	5	$\varnothing 280$	6xM5	1200	130 kg
300	300	325	360	8xM5	630	630	322	180	660	805	865	50	5	$\varnothing 366$	8xM10	1400	160 kg

ALL DIMENSIONS IN MM.

WE CAN SUPPLY UNITS WITH DIFFERENT HEIGHT, FRAMES, INSIDE DIAMETERS, ETC. PLEASE CONSULT OUR SALES DEPARTMENT FOR SPECIFICS.

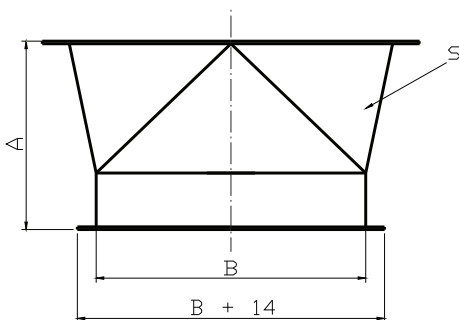
## MATERIALS EMPLOYED

FRAME:	STAINLESS STEEL (1.4301 / SS 304)
DETECTION COIL:	ALUMINUM, AS AN OPTION STAINLESS STEEL (1.4301 / SS 304)
CONTROL BOX:	SHEET STEEL (ST37), AS AN OPTION STAINLESS STEEL (1.4301 / SS 304)
COVER PLATE:	PP (POLYPROPYLENE)
SENSOR TUBE:	PP (POLYPROPYLENE), AS AN OPTION TIVA
CONNECTING FLANGE:	STAINLESS STEEL (1.4301 / SS 304)
REJECT HOUSING:	STAINLESS STEEL (1.4301 / SS 304)
REJECT FLAP:	STAINLESS STEEL (1.4301 / SS 304)
SHAFT:	STAINLESS STEEL (1.4301 / SS 304)
SEALING MATERIALS:	SILICONE / PTFE (TEFLON), FOOD GRADE

ALL UNITS ARE AVAILABLE WITH OTHER OPTIONS SUCH AS COMPLETE UNIT, INCL. DETECTION COIL IN STAINLESS STEEL / PP - DIFFERENT SENSOR TUBE MATERIALS, ETC. PLEASE CONSULT OUR SALES DEPARTMENT.

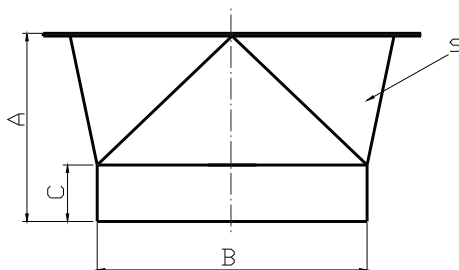
## OPTIONAL TRANSITIONS FOR INLET AND OUTLET PORTS

STAINLESS STEEL (1.4301 / SS 304)



	MODEL						
	80	100	120	150	200	250	300
A	60	60	60	100	100	150	150
B Ø	80	100	120	150	200	250	300
S	1	1,5	1,5	1,5	1,5	1,5	1,5

ALL DIMENSIONS IN MM.



	MODEL	
	50	70
A	70	70
B Ø	50	70
C	30	30
S	1	1

ALL DIMENSIONS IN MM.

WE CAN DELIVER CUSTOM FLANGES AND PORTS ACCORDING TO CUSTOMERS REQUIREMENTS. PLEASE CONSULT OUR SALES DEPARTMENT FOR DETAILS.

## INSTALLATION AND OPERATION INSTRUCTIONS

- THE UNIT NEEDS TO BE INSTALLED VERTICALLY. IN CASE OF A DEVIATION, PLEASE CONSULT WITH OUR APPLICATIONS DEPARTMENT.
- DO NOT INSTALL MOVING METAL PARTS SUCH AS GATES, AIRLOCKS NEAR THE INLET PORT.
- DO NOT EXCEED 0,5 M MAXIMUM FREE FALL HEIGHT FROM TOP OF UNIT.
- ASSURE SUFFICIENT FREE SPACE BELOW THE OUTLET PORTS. MATERIAL NEEDS TO BE ABLE TO FLOW FREELY.
- ASSURE A VIBRATION FREE OPERATING ENVIRONMENT. VIBRATIONS MAY CAUSE FALSE REJECTS.
- ASSURE ABSENCE OF EMFI (ELECTROMAGNETIC FIELD INTERFERENCE) CAUSED BY LARGE ELECTRIC MOTORS, HIGH VOLTAGE LINES ETC. OLDER FREQUENCY CONVERTERS AND SERVO DRIVES MAY CAUSE EMFI AS WELL.
- ASSURE A CONSTANT VOLTAGE SUPPLY TO THE DETECTOR. DO NOT CONNECT AND DISCONNECT TOGETHER WITH CONVEYING OR MATERIAL TRANSPORT SYSTEMS.
- POLL THE FAULT INDICATOR AT (CONNECTION BLOCK (C)).

## SENSITIVITY AND THROUGHPUT DIAGRAM

MODEL	50	70	80	100	120	150	200	250	300
SENSITIVITY <sup>1)</sup> STEEL-BALL Ø MM	0,3	0,45	0,5	0,6	0,7	0,9	1,0	1,5	1,75
THROUGHPUT <sup>2)</sup> L / H	13000	19000	22000	27000	33000	41000	55000	69000	83000

<sup>1)</sup> THE SENSITIVITY IS PROPORTIONAL TO THE DIAMETER OF THE APERTURE. THE SMALLER THE APERTURE, THE HIGHER THE SENSITIVITY. THE ABOVE STATED VALUES WERE OBTAINED IN THE CENTER OF THE APERTURE UNDER SIMULATED PRODUCTION CONDITIONS AND ARE VALID FOR MOST DRY POWDERS AND GRANULATES.

MAXIMUM OBTAINABLE SENSITIVITY VALUES CAN BE ESTABLISHED BY TESTING YOUR PRODUCT SAMPLE IN OUR LABORATORY.

SENSITIVITY VALUES FOR OTHER MATERIALS:

STAINLESS STEEL: FE SPHERE x 1 UP TO 2 (DEPENDENT ON THE ALLOY)

NON-FERROUS MATERIALS SUCH AS BRONZE, COPPER, ALUMINUM:  
FE SPHERE x 1.2 UP TO 1.8 (DEPENDENT ON THE TYPE OF METAL).

<sup>2)</sup> THE ABOVE STATED VALUES ARE APPROXIMATE. ACTUAL VALUES DEPEND ON THE FLOWABILITY, BULK DENSITY AND METHOD OF INFEEED. PLEASE CONSULT OUR APPLICATIONS DEPARTMENT.

## CONTROL UNIT AMD 05 (Version 5.2)

*ADVANTAGES THAT WILL CONVINCEN YOU!*

**SINGLE BOARD DESIGN** WITH BUILT IN REGULATED POWER SUPPLY FOR RELIABLE PERFORMANCE AND EASE OF SERVICE.

**AUTO-SETUP-ROUTINE** WITH INTERFERENCE SIGNAL SUPPRESSION AND AUTOMATIC SENSITIVITY CALIBRATION.

**MULTI-FILTER SYSTEM** USING DIGITAL FILTRATION FOR MAXIMUM STABILITY IN HARSH ENVIRONMENTS.

**AUTO-BALANCE** AUTOMATICALLY DETECTS AND COMPENSATES FOR ANY CHANGES IN THE SIGNAL DURING NORMAL OPERATION. (E.G. TEMPERATURE VARIATIONS)

**SELF MONITORING SYSTEM** ENSURES ALL IMPORTANT COMPONENTS ARE FUNCTIONING PROPERLY. IN CASE OF A FAULT, RELAY OUTPUTS ARE AVAILABLE. FAULTS ARE DISPLAYED AS TEXT IN REAL TIME.

**NARROW DETECTION ZONE** PROVIDES AN ACCURATE LOCATION OF THE METALLIC PARTICLE IN THE DETECTION FIELD ALLOWING PRECISE SEPARATION.

**TOUCHPAD CONTROLS** MODERN DESIGN. RUGGED TOUCHSCREEN FOIL WITH ERGONOMIC CONTROLS.

**4 BUTTON TOUCHPAD CONTROLS** SUPPORTED BY EASY TO UNDERSTAND MENUS FAST ACCESS TO ALL OPERATING PARAMETERS. USER SELECTABLE DIALOG LANGUAGE.

**5-LINE BACK-LIT LCD DISPLAY** WITH METAL SIGNAL INDICATION. ADDITIONAL LED INDICATOR LAMPS ARE BUILT IN TO INDICATE METAL DETECTION OR FAULTS.

**METAL COUNTER** CAN BE DISPLAYED ON THE LCD SCREEN OR INTERFACED WITH A PRINTER OVER A SERIAL INTERFACE.

**3-LEVEL PASSWORD PROTECTION** WITH INTER-CHANGEABLE CODE NUMBERS.

**METAL DETECTOR NETWORK AND REMOTE SERVICE**

EVERYTHING IS DO-ABLE! SEVERAL OPTIONAL SOFTWARE-PACKAGES ARE AVAILABLE. EXAMPLE: WITH THE BUILT-IN CAN-BUS-DATA PORT A NETWORK OF UP TO 125 METAL DETECTORS / SEPARATORS CAN BE OPERATED. THE UNITS CAN THEN BE REMOTE CONTROLLED AND OPERATED VIA A CENTRAL PC. ALSO REMOTE DIAGNOSIS, PARAMETER CHANGE AND SOFTWARE UPDATES VIA MODEM ARE POSSIBLE.

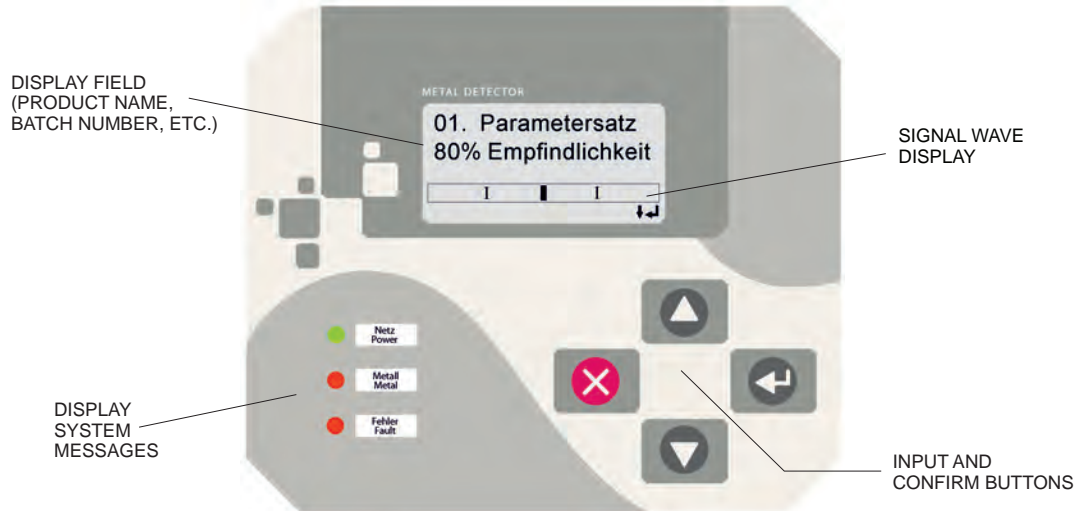


**SERIAL DATA PORT** FOR DIFFERENT TASKS. THE METAL DETECTOR IS EQUIPPED WITH 1 SERIAL DATA PORT (RS 232). HOWEVER THIS PORT IS RESERVED FOR FACTORY SERVICE ACCESS SUCH AS ADJUSTMENT DATA LOGGING, SOFTWARE UPDATES ETC.) AS AN OPTION, THIS DATA PORT MAY ALSO BE USED BY THE CLIENT (SWITCHABLE). IT CAN BE USED TO DRIVE A LOCAL OR CENTRAL PROTOCOL PRINTER. THE PROTOCOL LAYOUT CONFORMS TO ISO 9000 AND HACCP GUIDELINES. BI-DIRECTIONAL DATA COMMUNICATION WITH CUSTOMER'S SPS OR PC SYSTEMS IS AVAILABLE (OPTIONAL SOFTWARE PACKAGE).

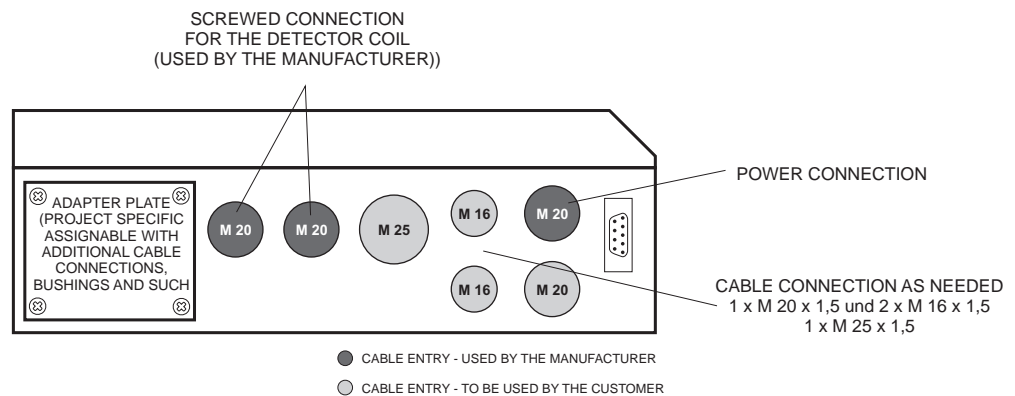
**PRODUCT STORAGE MEMORY BACKUP** FOR UP TO 500 INDIVIDUAL PRODUCTS. EACH PRODUCT HAS A COMPLETE SET OF ADJUSTMENT DATA ASSIGNED, SUCH AS SENSITIVITY, REJECT TIME ETC. THE DISPLAY OF TIME RELEVANT DATA IS IN REAL-TIME. INDIVIDUAL PRODUCT NAMES CAN BE STORED AS WELL.

## CONTROLS

EXAMPLE OF AN INPUT DISPLAY (DEPENDING UPON THE SELECTED MENU THE DISPLAY SHOWS DIFFERENT FUNCTIONS !)



## ELECTRONIC BOX



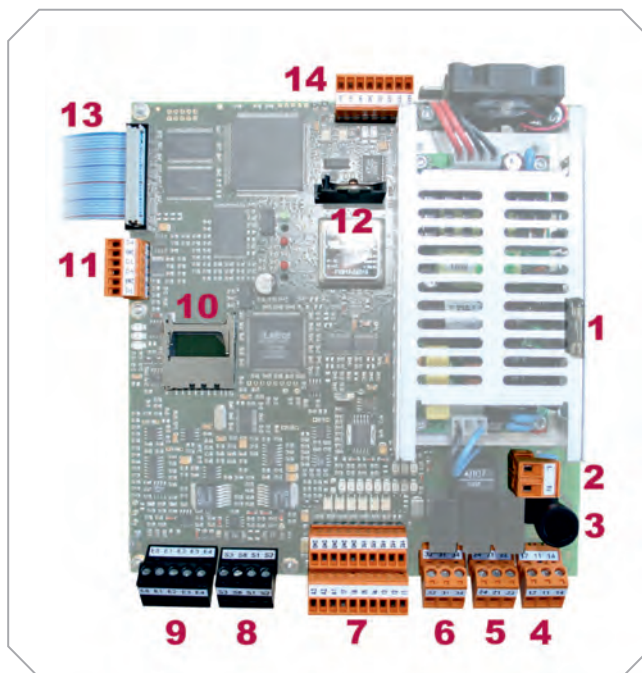
## TECHNICAL DATA

POWER SUPPLY:	100 - 240 V AC, 50/60 HZ
POWER CONSUMPTION:	MAX. 50 W
FUSE:	1,25 A (SLOW BLOW), 5 x 20 MM ACCORDING TO DIN
TYPE OF PROTECTION:	IP 65
WORKING TEMPERATURE RANGE:	- 5° C TO + 50° C
STORAGE TEMPERATURE RANGE:	- 10° C TO + 60° C
REL. HUMIDITY:	0 - 95 % (WITHOUT CONDENSATION)
CONVEYING SPEED:.	
VERSION:	
POWER CABLE:	SENSING AREAS MADE OF POLYPROPYLENE APP. 1,8 M CABLE WITH PLUG (TWO POLE AND EARTHING PIN) (US-VERSION WITH US-STANDARD PLUG)

OTHER VERSIONS AVAILABLE



## LAYOUT AMD 05



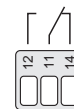
**1** SPARE FUSE

**2** POWER SUPPLY 100 - 240 VAC, 50/60 HZ



**3** DEVICE FUSE 1,25 A (SLOW BLOW) 5 x 20 MM ACCORDING TO DIN

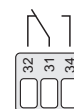
**4** RELAY 1 (SWITCHES NORMALLY ON METAL)  
 POTENTIAL FREE CONTACT  
 FROM FACTORY (IF NOT REQUESTED OTHERWISE)  
 RELAY 1 IS DESTINATED AS METAL-RELAY  
 MAX. CONTACT LOAD: 250 V/3 A



**5** RELAY 1 (SWITCHES NORMALLY ON OPERATION)  
 POTENTIAL FREE CONTACT  
 ASIDE FROM THE OPTICAL DISPLAY A POTENTIAL FREE  
 CONTACT IS AVAILABLE TO POLL THE UNIT CONDITION  
 MAX. CONTACT LOAD: 250 V/3 A



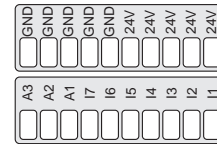
**6** RELAY 3 (TO BE CONFIGURED BY THE MANUFACTURER)  
 POTENTIAL FREE CONTACT  
 MAX. CONTACT LOAD: 250 V/3 A



## LAYOUT AMD 05

- 7** SEVEN (7) FREE PROGRAMABLE INPUTS (24V DC)  
AND THREE (3) FREE PROGRAMABLE OUTPUTS (24V DC)

In1 - INITIATOR / BUTTON „NORMAL POSITION“  
In2 - INITIATOR / BUTTON „EJECT POSITION“  
In3 - AIR PRESSURE MONITOR (PRESSURE SWITCH)  
In4 - INPUT LIGHT BARRIER  
In5 - POSITION SENSOR  
In6 - EXTERNAL RESET BUTTON  
In7 - NOT CONNECTED



THREE (3) FREE PROGRAMABLE OUTPUTS (24V DC)  
OUTPUTS (STANDARD LAYOUT)  
OUT 1 - 24 V OUTPUT METAL  
OUT 2 - 24 V OUTPUT READY  
OUT 3 - NOT CONNECTED

ADDITIONAL CONTACT POSSIBILITIES: LEVEL SENSORS AND MORE

MAX. LOAD FOR ALL INPUTS AND OUTPUTS  $I_{TOTAL} \leq 300 \text{ MA CUMULATIVE!}$

- 8** CONNECTION SENDER (USED BY FACTORY)  
**9** CONNECTION RECEIVER (USED BY FACTORY)  
**10** SLOT FOR SD MEMORY CARD  
**11** CAN – BUS DATA PORT  
**12** BATTERY  
**13** CONNECTION DISPLAY (USED BY FACTORY)  
**14** SERIAL DATA PORT (USED BY FACTORY)

### **Service and Calibration**

Bunting service engineers are available at short notice to service and calibrate our full range of detectors in the UK and overseas. Bunting offers 3 levels of protection designed to provide specific services to optimise the performance and lifespan of metal detection equipment

#### **Pro-Start™**

Pro-Start™ commissioning coverage ensures that a metal detector performs to company expectations from its first day on the job. A factory-trained service technician will be on-site to verify the installation, calibrate the metal detector to achieve top performance and train personnel. Pro-Start includes a calibration label for the detector, a complimentary set of test pieces (specify size and type on purchase) and a detailed calibration record for company files. It also extends the original one-year factory warranty to two years and includes two years of phone-based technical support.

#### **Pro-Maintenance™**

Pro-Maintenance™ keeps the metal detector operating like new, which is critical, considering the impact of poor performance on customer satisfaction and other consequences. It provides either annual (Gold plan) or biannual (Platinum plan) visits by factory-trained service technicians to service and calibrate the metal detector and ensure the system is running the latest accurate software. The Pro-Maintenance plan also includes significant parts and labour discounts on any needed spares and repair work, on-site training for personnel during service & calibration visits and two years of phone based technical support.



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